

Evaluation of Storage Offers

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PG&E Utility-Specific Evaluation

Quantitative Criteria

Portfolio Adjusted Value (PAV) =
Net Market Value (NMV) Benefits minus Costs
+ Adjustments for Localized Benefits, Portfolio Fit

Qualitative Criteria

- Project Viability and other criteria

Ranked Shortlisted Offers

- Based on PAV and qualitative criteria



Net Market Value

Co-optimize Energy, A/S, Variable Cost => Charging/Discharging

+ Net Energy Value

- Value of discharging – cost of charging using projected LMP

+ Ancillary Services Value

- Regulation Up/Down/REM, Spin in a limited market

+ Capacity Value

- Generic Resource Adequacy using Net Qualifying Capacity
- Flexible RA using Effective Flexible Capacity

- Variable Cost

- Variable O&M price applied over *discharge* schedule
- Includes fuel and start-up costs plus GMC, but not charging cost

- Fixed Cost

- Sum of capacity payment price times monthly contract capacity
- Fixed overhead (administrative costs plus cost of CAISO scheduling)



Quantitative Adjustments => PAV

Adjustments for Localized Benefits and Portfolio Effects

+/- Location

- Preference for NP15 projects
- Local Capacity Requirement may warrant premium

- Transmission Network Upgrade Cost

- This is past first point of interconnection; cost to interconnect in bid

+ Transmission/Distribution Investment Deferral Value

- NPV of least expensive non-storage alternative
- If dual-use, meet reliability need first, remaining hours play in market

+ Increased Efficiency for Fossil Generation

- Value to smoothing out net load => fewer starts, better efficiency
- Portfolio-wide benefit, will probably depend on generic characteristics

+ Renewable Generation Curtailment Support

- Also portfolio-wide: benefit of reduced curtailment, increased RPS



Qualitative Criteria

Implicit Factors that Inform Short List Selection

Project Viability

- Assess likelihood that Project can deliver
- May also assess environmental impacts

Creditworthiness

- Ability to meet financing obligations

Supplier Diversity

- Give maximum practicable opportunity to DBE, encourage > 30%

Credit and Counterparty Concentration

- Effect on credit concentration, and counterparty concentration

Technology Diversity

- May seek technological diversity to further market transformation

Modifications to Key Contract Terms

- Operational/cost impact of any proposed modifications

Questions ?

